

## Ch. 10 Worksheet #1 (HW 27)-Fundamental Counting Principle and Permutation

Please complete each problem on a separate sheet of paper. Show all of your work!!

**For questions 1-4, solve each problem.**

1. Tim wants to buy one of three different albums he sees in a music store. Each is available on tape and on CD. From how many combinations of album and format does he have to choose?
2. Carlos has homework to do in math, chemistry, and English. How many ways can he choose the order in which to do his homework?
3. The menu for a banquet has a choice of two types of salad, five main courses, and three desserts. How many ways can a salad, two main courses, and dessert be selected to form a meal?
4. Each question on a five-question multiple-choice quiz has answer choices labeled A, B, C, and D. How many different ways can a student answer the five questions?

**For questions 5-6, find the value of each permutation without a calculator.**

5.  ${}_8P_2$

6.  ${}_6P_4 \cdot {}_9P_3$

**For questions 7-12, solve each problem.**

7. Find the number of ways of giving out awards to the winner and first, second, and third runners-up in a contest with 10 finalists.
8. Find the number of arrangements of the letters in the word “algebra”
9. Find the number of ways of placing an algebra book, a geometry book, a chemistry book, an English book, and a health book on a shelf.
10. Find the number of ways of seating five men and five women alternately in a row, beginning with a woman.
11. There are four Pomeranians, five golden retrievers, 2 Great Pyrenees, and six English terriers in a dog show. In how many ways can the dogs line up in front of the judges if the same breed are considered identical?
12. There are seven students entered into an art contest. Find the number of ways of giving out gold & silver medals.